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10/555,477	09/13/2006	Brian B. Filippini	3239-01	4244

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EXAMINER

KENNEDY, NICOLETTA

ART UNIT	PAPER NUMBER
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1611

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/555,477	Applicant(s) FILIPPINI ET AL.	
	Examiner Nicoletta Kennedy	Art Unit 1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,7,8,11 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7,8,11 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/3/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

Claims 1-3, 7-8, 11 and 17-20 are currently pending.

Priority

This application, filed November 3, 2005, is a national stage entry of PCT/US04/14336, filed May 7, 2004, and claims priority to provisional application 60/468439, filed May 7, 2003.

Election/Restrictions

1. Applicant's election of claims 1-3, 7-8, 11 and 17-19 in the reply filed on July 21, 2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claim 20 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method of making a multiple emulsion, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 21, 2010.

Claim Objections

3. Claim 1 is objected to because of the following informalities: there is an extraneous "2" in the last line of claim 1.
4. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

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required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1-3, 7-8, 11 and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.** Applicant's claim that the emulsifier is used in the range of about 0.1 wt% to about 30 wt% but fail to specify whether this is the emulsifier claim in line 5 of claim 1 or line 11 of claim 1. For purposes of examination, it is presumed that it is the emulsifier in line 5 of claim 1.

7. **Claims 3 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 3, the phrase "such as" in line 9 and the phrase "like" in line 6 render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 11, the phrase "such as" in line 9 and the phrase "including" in line 5 render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

8. **Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject**

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matter which applicant regards as the invention. The newly added language does not make grammatical sense. For example, the phrase "the reaction products...followed by further functionalized by," seems to have words missing. Also, "such acid methyl glyoxylate methyl hemiacetal, followed by further functionalized with" does not make scientific or grammatical sense.

9. **Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.** Claim 11 recites the limitation "oil composition" in the first line of the last paragraph of claim 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. **Claims 1-2, 7-8, 11, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodham et al. (US 2002/0025986) (pub. Feb. 28, 2002) in view of Taranta (WO 02/089573) (pub. Nov. 14, 2002).**

The claims are directed to a multiple W/O/W emulsion comprising a polyisobutenyl succinic-anhydride-derived emulsifier in the W_1/O emulsion.

Regarding claims 1-2, 17 and 19, Rodham et al. teach a water-in-oil-in-water multiple emulsion comprising a continuous aqueous phase having dispersed therein wherein the oil phase droplets themselves each contain dispersed "inner" aqueous phase droplets (para. 0002). Especially preferred polymeric surfactants capable of stabilizing the internal phase used to form the initial water-in-oil emulsion (W_1/O) include the reaction product of polyisobutylene-succinic anhydride (PIBSA) and ethanolamine (paras. 0014-0016). A second surfactant is used to disperse the water-in-oil emulsion (W_1/O) into the aqueous phase (W_2) in order to form the multiple emulsion (para. 0018). The external phase may comprise a thickening agent to increase viscosity (para. 0024).

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Additionally, either surfactant may be a mixture of surfactants (co-surfactants) (para. 0024). The multiple emulsion is particularly suitable for the manufacture of slow-release formulations of water-soluble herbicides, a type of horticulture or agriculture product (para. 0047). The primary emulsifier in example 1, ATLOX 4912, is present at 0.46% by weight (p. 7, table 1, example 1) and it would have been within the purview of a skilled artisan to substitute the reaction product of PIBSA and ethanolamine for ATLOX 4912 because Rodham et al. teach that the reaction product of PIBSA and ethanolamine may be used as the primary emulsifier.

However, Rodham et al. fail to teach the mean diameter of the internal water-in-oil emulsion droplets. Taranta cures this deficiency.

Taranta teaches a pesticide oil-in-water-in-oil emulsion which is useful for controlling weeds, diseases and pests (abstract). Taranta teaches that multiple emulsions preferably have a multiple drop size in the range of 3 to 24 microns and that the inner oily phase droplets should have a mean diameter of lower than 1.5 microns to ensure stability in the final emulsion (pp. 3 and 9).

It would have been prima facie obvious to a person of ordinary skill in the art at the time of the invention to have combined the teachings of Rodham et al. with those of Taranta to have internal water phase droplets of less than 1.5 microns and water-in-oil droplets of 3 to 24 microns. One would have been motivated to do so because Taranta teaches that this improves the multiple emulsion stability. Although Taranta teaches an O/W/O emulsion, the benefit of small droplet size on stability would be expected to be

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the same for W/O/W multiple emulsions, especially since Taranta reference several W/O/W multiple emulsions in their background section.

With regard to the mean diameter ranges, MPEP 2144.05 states that “[i]n the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a *prima facie* case of obviousness exists” quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In the instant case, the claimed ranges overlap or lie within the ranges of the prior art and are therefore *prima facie* obvious.

Regarding claim 7, Rodham et al. teach that the primary emulsifier may comprise a mixture of surfactants and surfactants that may be used as the primary emulsifier include the reaction product of polyisobutylene-succinic anhydride and ethanolamine and sorbitan monooleate or lecithin (para. 0017).

Regarding claim 8, Rodham et al. teach that distilled water is present at 40.08% by weight of the internal emulsion and the diesel oil is present at 21.75% (p. 8, example 8). Distilled water has been deionized and demineralized. The internal water-in-oil emulsion is present at 60.31 to 39.69.

Regarding claim 11, Rodham et al. teach that the secondary emulsifier may be sorbitan esters condensed with various molar proportions of ethylene oxide (para. 0021). The secondary emulsifier is suitably present up to about 0.5% (para. 0062). MPEP 2144.05 states that “[i]n the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a *prima facie* case of obviousness exists” quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In the instant case, the claimed ranges overlaps the range of the prior art and is therefore *prima facie* obvious. Rodham

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et al. further teach that the thickening agent is optional, and therefore may be present at 0% (para. 0024). Rodham et al. teach that the multiple emulsion comprises 2.0% by weight sodium chloride (an inorganic salt) (p. 7, table 1, example 1). No water-dispersible additives or oil phase additives are present and are thus present at 0% by weight (p. 7, table 1, example 1).

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodham et al. (US 2002/0025986) (pub. Feb. 28, 2002) in view of Taranta (WO 02/089573) (pub. Nov. 14, 2002) as applied to claims 1-2, 7-8, 11 and 17-19 above, and further in view of Griffin (Classification of Surface-Active Agents by “HLB”, 1949).

The claims are directed to a multiple W/O/W emulsion comprising a polyisobutenyl succinic-anhydride-derived emulsifier in the W₁/O emulsion wherein the multiple emulsion comprises an oil-in-water emulsifier with an HLB of about 8-20.

Regarding claim 18, Rodham et al. teach that a secondary emulsifier is used to disperse the water-in-oil emulsion in the second water phase and is thus an oil-in-water emulsifier. However, Rodham et al. in view of Taranta fail to teach that HLB of the emulsifier. Griffin cures this deficiency.

Griffin teaches that an oil-in-water emulsifier has an HLB of about 8-18 (Griffin, p. 314). MPEP 2144.05 states that “[i]n the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a *prima facie* case of obviousness exists” quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

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It would have been prima facie obvious to a person of ordinary skill in the art at the time of the invention to have combined the teachings of Rodham et al. and Taranta with those of Griffin to use an oil-in-water emulsifier with an HLB between 8 and 20. One would have been motivated to do so because Rodham et al. teach an oil-in-water emulsifier and Griffin teaches that such an emulsifier has an HLB within the claimed range.

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodham et al. (US 2002/0025986) (pub. Feb. 28, 2002) in view of Taranta (WO 02/089573) (pub. Nov. 14, 2002) as applied to claims 1-2, 7-8, 11, 17 and 19 above, and further in view of Hueffer et al. (WO 2002/070633) (pub. Sept. 12, 2002) (English machine translation).

The claims are directed to a polyisobutenylamine emulsifier used as a water-in-oil emulsifier in a multiple emulsion.

Rodham in view of Taranta teach each limitation of claim 1 but fail to teach that the primary emulsifier is a polyisobutenyl amine. Hueffer et al. cure this deficiency.

Hueffer et al. teach that polyisobutenyl amines are used as emulsifiers for water-in-oil emulsions (p. 1). Hueffer et al. teach that it is known to use polyisobutenyl succinic anhydride as emulsifiers as well (p. 1).

It would have been prima facie obvious to a person of ordinary skill in the art at the time of the invention to have combined the teachings of Rodham et al. and Taranta with those of Hueffer et al. to substitute a polyisobutenylamine emulsifier for the polyisobutenyl succinic anhydride of Rodham et al. One would have been motivated to

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do so because both polyisobutenylamine and polyisobutenyl succinic anhydride are known water-in-oil emulsifier used to form a water-in-oil emulsion.

Conclusion

No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicoletta Kennedy whose telephone number is (571)270-1343. The examiner can normally be reached on Monday through Friday 11:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Gollamudi Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. K./

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Examiner, Art Unit 1611

/Anne R Kubelik/

Primary Examiner, Art Unit 1638